Cooperative State Planning And Research Program: Part II

OCTOBER 1996-SEPTEMBER 1997: SPR-0010(972)

TRANSPORTATION RESEARCH AND DEVELOPMENT BUREAU
NEW YORK STATE DEPARTMENT OF TRANSPORTATION
State Campus, Albany, New York 12232-0869

COOPERATIVE STATE PLANNING AND RESEARCH PROGRAM
PART II: 10/96 - 9/97
SPR-0010(972)

September 1996

TRANSPORTATION RESEARCH AND DEVELOPMENT BUREAU
New York State Department of Transportation
State Campus, Albany, New York 12232-0869

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NYSDOT
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Albany, New York 12232

PREFACE

This work program is a statement of transportation research and development activities that qualify for reimbursement from Federal Cooperative State Planning and Research (SPR) funds. It describes work that will be performed during the program period -- October 1996 through September 1997. Projects completed during the last six months are listed in Section VI, which also lists reports published in that period and Experimental Features that were evaluated in SPR projects. This section, along with the rest of the work program, serves as one of two semiannual reports on the research program.

Section VIII lists all ongoing non-federally funded research projects. This section along with the rest of this publications presents the total research program:

Section I Technical Assistance & Technology-Transfer Program
Section II Experimentation Program: Types A & B Continuing Studies
Section III Proposed Projects Not Yet Initiated
Section IV Pooled SPR Fund Projects
Section V Administration/Training
Section VI Completed Projects
Section VII 100% State-Funded Projects

All salary allocations included an estimated fringe-benefit factor of 35.44 percent (annual salary x 0.3544). The actual factor, to be established by the New York State Department of Audit and Control and Division of the Budget, represents the employer's share of workers compensation, hospitalization, retirement-fund charges, and other contributions.

SPR PART II FUNDING SUMMARY

SPR PART II		80% FEDERAL	100% FEDERAL	TOTAL
Research Program *(See Table 1 for details)*		3,670,000		3,670,000
FUNDED ACTIVITIES				
TRB General Suppt			208,000	208,000
NCHRP	086–0004–196		860,000	860,000
Pooled Funds			161,000	161,000
LTAP	086–LTAP–962	150,000	110,000	260,000
IVHS Program Coor	IVHS–02–883	112,000		112,000
High Tech, Info and Communication Sys		285,000		285,000
TOTAL PART II		4,217,000	1,339,000	5,556,000

100% STATE FUNDED STATE ACTIVITIES *(See Section VII for details)*				TOTAL
Admin State Fund	R01001801			90,000
UTRC–Curing	R01239801			5,000
Eval Ignition Ovens	R01258801			20,000
TOTAL 100% STATE				115,000

TABLE 1
SUMMARY OF COOPERATIVE STATE PLANNING AND RESEARCH PROGRAM:
SPR-0010(972) PART II 10/96 - 9/97

Project Number	Project Title & Research Supervisor	Annual Plan
10-01	Administration	250,000
10-02	Administration - Proj Selection/Prog Development	100,000
10-03	Administration - UTRC	12,500
10-04	Administration - Consortium/Contract Research	58,000
16-00	Training	30,000
	Subtotal	450,500
TECHNICAL ASSISTANCE AND TECHNOLOGY TRANSFER PROGRAM		
11-0	Information Exchange	280,000
11-01	Engineering Soils Survey (Reagan)	5,000
11-02	Information Exchange - Library Operations (Frederick)	95,000
11-03	Information Exchange - Newsletters (Frederick)	30,000
11-04	Information Exchange - Library Support (Frederick)	23,000
12-0	Consultation	500,000
12-22	FHWA/SHRP-LTPP (Yang)	40,520
12-28	ERTAP Consultation	7,500
12-38	Consultation - Statistics (Sandhu)	95,000
12-48	SHRP Superpave (Yang)	50,000
12-49	Falling Weight Deflectometer (Yang)	190,000
12-52	Geosynthetic Slopes and Retaining Walls (Sandhu)	33,000
12-56	Cost Effective Use of Shoulder Rumble Strips (Yang)	10,000
12-57	Loss of Entrained Air Hardened Concrete (Yang)	20,000
12-59	Full-Depth Shear Key Performance (Alampalli)	10,000
12-60	Field Investigation Svs Life Corr Steel Culverts (Sandhu)	17,000
12-61	Joint Bridge Decks With Hot-Mix Asphalt (Alampalli)	20,000
12-62	Acceptance Criteria Cast Iron Articles (Alampalli)	15,000
13-0	Implementation	15,000
13-10	Implementation of Glasgrid (Valenti)	11,000
13-11	Hypertext Implementation for Construction Manuals (Torre)	15,000
13-14	Implementation - SHRP Products (Valenti)	50,000
14-01	Local Technical Assistance Program (Valenti)	10,000
15-01	Engineering Computer Systems Support (Sandhu)	86,000
20-00	Contract Research (Sandhu)	1,000,000
	Contract Research - Cornell	200,000*
20-03	Cost Eff of Consolidating Gov Hy Sys (Fahrenkopf)	59,030*
20-04	Eff Mkt of Transit Systems and HOV (Svejkovsky)	127,055*
20-05	Rev and Dev of Life-Cycle Cost and Networking (Shufon)	130,325*
20-06	Lateral Protection Short-Term Work Zones (Mencucci)	80,000*
	Subtotal	2,628,020
EXPERIMENTATION PROGRAM: TYPE A CONTINUING STUDIES		
214-1	Performance of Two Rubber-Modified Asphalt Overlays (Yang)	10,000
224-1	Development of an Overlay Design Procedure for NYS (Yang)	80,000
225-1	Hydr-Frac Test Apparatus & Proc Deter Aggregate Durability (Sandhu)	70,000
226-1	Pile Load Dis Earth Press Integral Abutments (Alampalli)	120,000
	Subtotal	280,000
EXPERIMENTATION PROGRAM: TYPE B CONTINUING STUDIES		
192-1	Effectiveness of Hand Signal Devices (Sandhu)	6,000
217-1	Deter on Long-Term Perf of Chem Grouts in Concrete (Sandhu)	15,000
218-1	Engineering Automation Tool Evaluation/Implementation (Green)	20,000
220-1	Evaluation of Winter Traffic Accidents (Sandhu)	45,000
	Subtotal	86,000
EXPERIMENTATION PROGRAM: PRE-PROJECT PLANNING		
	Subtotal	0
EXPERIMENTATION PROGRAM: PROJECTS NOT YET INITIATED/CONTINGENCIES		
	Projects Not Yet Initiated	0
	Consultations Not Yet Initiated	145,000
	Contingencies	80,480
	Subtotal	225,480
GRAND TOTAL SPR-0010(972) PART II FY 10/96-9/97		3,670,000

* Prior year funds; not included in total.

Table 2A

PROJECTS NOT YET INITIATED: SPR–0010(972) Part II

ERTAP PROJECT NUMBER	TITLE	ERTAP CLASS*	ESTIMATED TOTAL PROJECT COSTS	ESTIMATED 1996–97 PROJ COSTS
	ERTAP APPROVED SUMMER 1993			
93–052	Development of Improved Pavement Performance Prediction Model	1	120,000	0
93–080	Analysis of Innovative Wall System	1	160,000	0
			380,000	0

* Research project, applied

Table 2B

CONSULTATIONS NOT YET INITIATED: SPR–0010(972) Part II

ERTAP PROJECT NUMBER	TITLE	ESTIMATED TOTAL PROJ COSTS	ESTIMATED 1996–97 PROJ COSTS
93–082	Temperature Gradients in PCC Pavement for Different Regions in NYS	40,000	0
94–027	Effect of Vehicle–Generated Heat on Asphalt Pavement Rutting	50,000	0
94–028	Impact Perform Temporary Concrete Barrier Installed Transverse to the Roadway at Roadway Closure Sites	49,000	0
94–033	Destructive Testing of Prestressed Concrete Beams	45,000	15,000
94–051	Analysis of Historical Cost Data	30,000	0
95–010	Selecting Design Criteria on Highway and Bridge Design Projects	30,000	0
95–020	Contruction Disposal Costs	20,000	0
95–052	Barrier Delineation	35,000	0
95–055	In–Situ Moisture Content and Humidity Using NDT Methods	30,000	10,000
95–056	Post–Tensioning Existing Steel Bridge Members	250,000	40,000
95–058	Development of Spec. for Recycled Plastic in Highway Appl. in NYS	45,000	30,000
95–073	Determination of Lane Storage and Downstream Transition Requirements	35,000	0
95–074	Adding Quality And Performance Criteria To ITS Contracting	45,000	25,000
95–075	Construction and Evaluation of a Noise Barrier Using Recycled Plastic	50,000	25,000
		754,000	145,000

Note: Consultations listed in numeric rather than priority order.

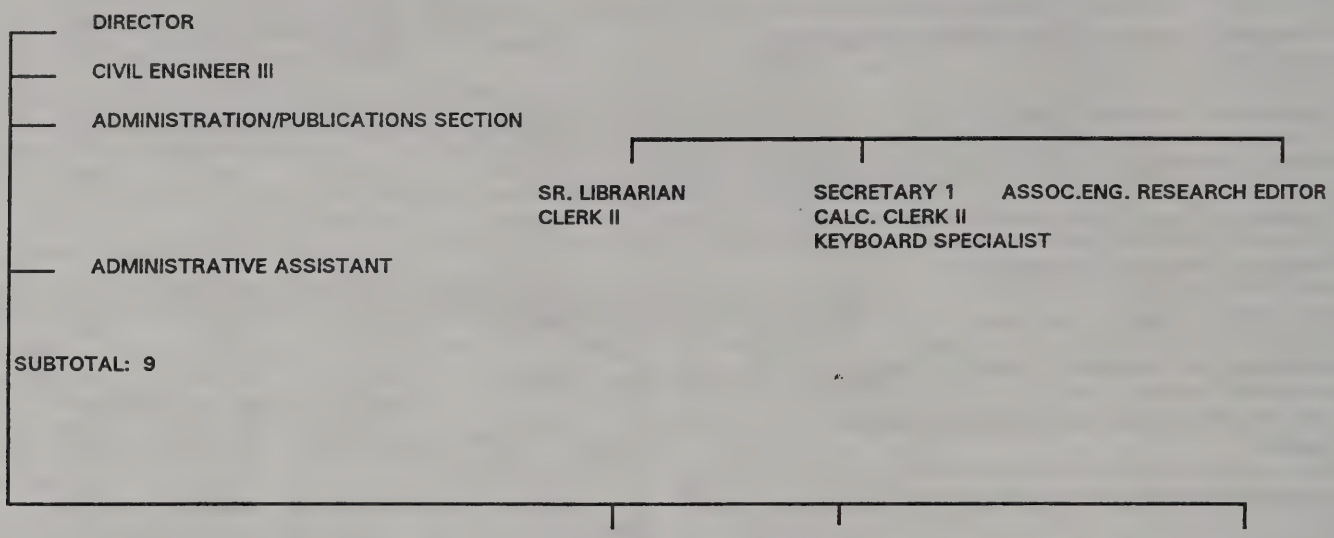
TABLE 3
100% SPR POOLED-FUND PROJECTS: SPR-0010(972)PART II

TITLE OF STUDY		FUNDING COMMITMENT	FY 1996	FY 1997	FY 1998	FUTURE
EXISTING NATIONAL STUDIES	**SPR-2**					
Performance Evaluation of Crumb Rubber Modified (CRM) Asphalt Pavements	(166)	$35,000	$5,000	$5,000	$5,000	$5,000
High Strength Concrete for Bridges	(170)	$80,000	$20,000	$20,000	$0	$0
Predicting HOV Facility Demand	(171)	$30,000	$10,000	$0	$0	$0
Evaluation of Crumb Rubber Modified Asphalt Pavements	(174)	$25,000	$5,000	$0	$0	$0
Development of Standard Reference Soils	(175)	$15,000	$5,000	$0	$0	$0
National Vehicle Detector Test Center	(181)	$40,000	$20,000	$0	$0	$0
Development and Validation of Traffic Data Editing	(182)	$45,000	$15,000	$15,000	$0	$0
Long Term Field Monitoring of Mitigating Corrosion Inhibitors	(184)	$30,000	$6,000	$6,000	$6,000	$12,000
Roadside Safety Hardware Crash Tested to NCHRP Report 350	(187)	$20,000	$5,000	$5,000	$5,000	$5,000
Support Maintenance and Refinement of the National Trans. Control/ITS Communications Protocol (NTCIP)	(189)	$25,000	$5,000	$5,000	$5,000	$10,000
Comprehensive Transportation Information and Planning System (CTIPS)	(190)	$25,000	$25,000	$0	$0	$0
SUBTOTAL			$121,000	$56,000	$21,000	$32,000
EXISTING REGIONAL STUDIES	**SPR-3**					
Lateral Work Zone Protection *	(028)	$160,000	$80,000	$0	$0	$0
Rockfall Hazard Rating System	(032)	$50,000	$50,000	$0	$0	$0
Travel Model Improvement Program	(035)	$20,000	$10,000	$10,000	$0	$0
PENNDOT Epoxy Rebar Study	(036)	$150,000	$75,000	$75,000	$0	$0
SUBTOTAL			$215,000	$85,000	$0	$0
PROPOSED NATIONAL STUDIES						
Roadside Design for Trucks/large Vehicles	S-97-13	$20,000	$0	$10,000	$10,000	$0
Durability of Geo-Synthetics	S-97-28	$10,000	$0	$10,000	$0	$0
SUBTOTAL			$0	$20,000	$10,000	$0
TOTAL			$336,000	$161,000	$31,000	$32,000

* Coming from Contract Research funds - NYS share $80,000

FIGURE 1A: Organizational Structure

Total Positions: 46



	STRUCTURES	MATERIALS/PAVEMENTS	T^2/IMPLEMENTATION/SPECIAL SERVICES
ENGINEERING RESEARCH SPECIALIST II	1	1	1
ENGINEERING RESEARCH SPECIALIST I	3	3	4
ASSOC. STATISTICIAN			1
SENIOR STATISTICIAN			1
SENIOR COMPUTER PROGRAMMER/ANALYST			1
PROGRAM RESEARCH SPECIALIST II (TRANS.)			1
TRANSPORTATION ANALYST			1
CIVIL ENGINEER I	4	4	5
JUNIOR ENGINEER	1		0
LAB EQUIPMENT DESIGN			1
ELECTRONIC EQUIPMENT MECHANIC			1
PRINCIPAL ENGINEERING TECHNICIAN			1
SENIOR ENGINEERING TECHNICIAN			2
TOTAL	9	8	20

TRANSPORTATION RESEARCH & DEVELOPMENT BUREAU

MISSION: To manage a targeted engineering research and development program to enhance the quality and cost-effectiveness of engineering policies, practices, procedures, standards, and specifications. Activities performed to accomplish this mission include applied research, technical assistance, technology transfer, and engineering consultation.

DIRECTOR'S OFFICE (518) 457-5626
Fax (518) 457-7535

Dr. Robert J. Perry, Director
Nancy A. Troxell, Secretary I

Robert A. Valenti, Civil Engineer III
Manages Local Technology Assistance Program Contract

STRUCTURES

Dr. Sreenivas Alampalli (Acting)
Engineering Research Specialist II

Conducts research to develop and verify new structural design techniques and to refine existing methods.

Provides technical consultation and assistance in the area of structures.

Performs load capacity evaluations of existing structures through physical testing and analysis.

Evaluates equipment and procedures for bridge inspection and evaluation.

Performs mathematical analysis of unique structural configurations.

Provides assistance for structural evaluation and monitoring.

Performs finite element analyses.

Dr. Osman Hag-Elsafi, ERS I

Jyotirmay Lall, MS **Dr. Ruijia Mu**
David Elwell, MS

MATERIALS/PAVEMENTS

Dr. Wei-Shih Yang
Engineering Research Specialist II

Conducts research to develop new or improved specifications for construction and maintenance materials.

Confirms or develops design, construction, and maintenance practices that promote effective, economical use of materials, and that result in more economical pavements, improved service, optimized performance, and extended service life.

Provides technical assistance in the subject areas of materials and pavements.

Coordinates FHWA/SHRP long-term pavement performance activities.

Performs analyses of pavements.

Dr. Luis Julian Bendaña, ERS I
Dr. M. Makbul Hossain, ERS I
Cheng Chou, MS, ERS I

Rick Morgan **Tom Van Bramer**

TECHNOLOGY TRANSFER/IMPLEMENTATION/ SPECIAL SERVICES

Dr. Deniz Sandhu
Engineering Research Specialist II

Conducts engineering research to develop or improve specifications and practices in areas other than structures or materials/pavements.

Provides technical assistance and consultation in various engineering subject areas.

Provides Department-wide statistical consultation.

Coordinates distribution of federal technology transfer materials.

Administers implementation of research results within the Department.

Monitors University Transportation Research Consortium projects.

Administers FHWA pooled-fund studies.

Determines the Department's desire to participate in federal demonstration projects and coordinates their scheduling.

Coordinates the federal Experimental Features program.

Dr. Michael Mathioudakis, ERS I
Dr. Ossama Abd Elrahman, ERS I
Dr. Mohamed Elkordy, ERS I
Dr. Piotr Bajorski, Associate Statistician

Ed Bikowitz **Colin Campbell**
Maggie Cusack

ADMINISTRATION/PUBLICATIONS

Mary J. Frederick
Administrative Assistant

Administers fiscal management of the Department's SPR-Part II Research Program

Coordinates annual research suggestion process.

Provides editorial support to Department personnel.

Manages Department's Research Library including various on-line services to assist Department staff in performing literature searches.

Publishes various Department documents, including Bureau publications such as research reports, Quarterly R&D Digest, TNT Newsletter, Annual Briefing Report, etc.

Provides Bureau's administrative and clerical support in Human Resource Management, budget preparation and monitoring of funds and special study analyses.

Dorothy Hogan, Librarian
Marie Goldston, Clerk 2
A. Donald Emerich, Engineering Editor
Linda Hotaling, Calculations Clerk 2

ELECTRONICS LAB

Designs, constructs, installs, calibrates, and repairs electrical instrumentation systems used in the collection of data for research projects.

Bill Roth

SECTION 1

Technical Assistance and Technology Transfer Program

PROJECT: **11-0 INFORMATION EXCHANGE**

SCOPE: As the title implies, this project covers activities providing for the transfer of technical information from one party to another. Other activities charged to this project include coordination of Experimental Feature Work Plans, support activities to the NCHRP Program, and coordination of pooled-fund projects. Examples of work performed under this project during the program period include:

1. Julian Bendaña visited FHWA and the Turner Fairbanks Highway Research Center October 23-25, 1995 in Washington, DC. He visited the Accelerated Loading Facility (ALF) and discussed various research issues including PCC pavement blow-ups.

2. Sam Elrahman attended the ITS-NY Fall Research Conference at the Rensselaer Polytechnic Institute October 18-19, 1995.

3. In October, 1995, with the assistance of Bureau personnel, Gongkang Fu organized a briefing meeting with the Structures Design & Construction Division on research projects related to their program. It was well received by the Structures Division, and Transportation Research and Development Bureau personnel.

4. Julian Bendaña participated in the NCHRP Project 1-36, "Determination of Pavement Damage for Super-Single and Single-Out Dual Truck Tires" panel meeting on November 6-7, 1995 in Washington, DC.

5. Osman Hag-Elsafi attended the Statewide Local Bridge Engineers Conference in Syracuse, New York on November 15, 1995.

6. Wes Yang attended the NCHRP Project Panel Meeting for 10-48 "Assessing Pavement Layer Condition Using Deflection Data" to select a contractor on December 7-8, 1995 in Washington, DC.

7. The TNT newsletter was printed and distributed with an insert soliciting research suggestions to be considered for the Department's 1996 research program. Additionally, a similar solicitation was circulated to Department program areas and was included in the "Transportation R&D News."

8. The RAC Research-in-Progress database was updated and distributed to AASHTO region one states and to the other AASHTO regions via mail. TR&DB also sent periodic updates of the database via Internet to Washington DOT's World-Wide Web server.

9. Deniz Sandhu was appointed as a member of the TRB "Committee on Statistical Methodology and Statistical Computer Software in Transportation Research (A5011)."

10. Gongkang Fu organized a session of technical presentations for the TRB "Committee A2C05 on Dynamics and Field Testing of Bridges," for its committee meeting at the TRB annual meeting.

11. Hong-Jer Chen presented a paper, "Updating Pavement Design Procedures for New York State" to the 75th Annual TRB meeting at the flexible pavement design session in Washington, DC January 8-11, 1996.

12. Deniz Sandhu attended the 75th Annual TRB meeting. She presented the paper entitled "Forward Lighting Configurations for Snowplows", and attended the meetings of TRB committees on "Statistical Methodology (A5011)" and "Technology Transfer (A5012)." Following the presentation, she was invited to present the paper at the AASHTO Maintenance and Equipment Workshop in the summer and a request was received from "Better Roads" to print a shorter version of the paper in their June 1996 issue.

13. A copy of the NYSDOT study "Evaluation of SHRP Superpave Low Temperature Equation" was sent to Samuel R. Miller, Deputy Chief Engineer, Office of Materials and Research, Maryland State Highway Administration, January 11, 1996.

14. Bob Valenti participated in the conference call held among Transportation Association of Canada (TAC) steering committee members and the contractor synthesizing transportation research performance evaluation mechanisms. The report was completed in March 1996.

15. Sreenivas Alampalli attended the "XIV International Modal Analysis Conference" in Dearborn, MI, February 12-13, 1996. He organized a technical session on "Structural System Identification Using Measured Vibration" at the conference.

16. CALTRANS and FHWA invited Sreenivas Alampalli to attend the "Structural Materials Technology and NDT Conference" held in San Diego, February 19-23, 1996. He presented a paper entitled "Nondestructive Tests for Bridge Fatigue Damage Detection" at the conference. This paper is coauthored by Sreenivas Alampalli, Gongkang Fu and Everett Dillon.

17. At the request of the principal investigator of NCHRP Project 20-7, Task 74, "Manual for Scientific Inquiry into Transportation Problems: Research Methodologies", Deniz Sandhu compiled and forwarded course materials developed for TR&DB staff, and other research program information.

18. Wes Yang attended the AASHTO Joint Task Force on Pavements Workshop on "Improved Pavement Design Procedures" in Irvine, CA on March 24-26, 1996. The goal of the task force is to have a new AASHTO Pavement Design Guide by 2002. Wes Yang attended a conference on "Improving Pavements with LTPP: Products for Today and Tomorrow" in Irvine, CA on March 26-28, 1996.

19. The discussion paper entitled "Using Internet to Enhance Effectiveness of Research Programs: A Global Approach to Information Sharing" was reviewed by some AASHTO Research Advisory Committee (RAC) members. S. Elrahman incorporated their comments into the paper, and the final version was distributed for discussion during the National RAC meeting July, 1996.

20. On April 11, 1996, Piotr Bajorski (invited by the School of Environmental Engineering at Cornell University), made a presentation on "Application of Statistical Method in Engineering" to the faculty and students at Cornell University.

21. On April 27, 1996, Piotr Bajorski participated in the Albany Chapter of the American Statistical Association Conference at RPI. He made a presentation on "Statistical Analysis of Field Evaluation of Calibrated Falling-Weight Deflectometers."

22. G. Fu attended a meeting of ASCE Committees on Steel Bridges, Safety of Bridges, Dynamic Effects of Structures, Safety of Buildings, Structural Identification of Constructed Facilities, and Fatigue and Fracture, at the ASCE Structures Congress 96, Chicago, IL, April 13-16, 1996.

23. Sreenivas Alampalli attended meetings of ASCE Task Committee on System Identification of Constructed Facilities, and a Technical Committee meeting on Methods of Monitoring Performance of Full-Scale Structures, at the ASCE Structures Congress 96, Chicago, IL, April 15, 1996.

24. Gongkang Fu presented a lecture on Testing of Structural Models at RPI on April 25, 1996 to students and faculty of its Civil Engineering Department.

25. Michael Mathioudakis attended the panel meeting for NCHRP Project 20-5, Topic 25-21, "Service Life of Drainage Pipe - A Synthesis of Highway Practice", in Washington, DC on May 30, 1996.

26. Wes Yang attended an annual AASHTO Joint Task Force on Pavements meeting May 21-22, 1996 in Lexington, KY. The Joint Task Force on Pavements is developing a new AASHTO Pavement Design Guide by the year 2002 under NCHRP Project 1-37.

27. On May 1, 1996, Michael Mathioudakis attended a site demonstration of video inspection of highway edge drains. The demonstration, which is part of FHWA Demonstration Project 87, "Drainable Pavement Systems - Phase II" was offered by Brent-Rauhut Eng., of Austin, TX.

28. Julian Bendana reviewed comments from the University of Nevada research team for NCHRP Project 1-36 "Determination of Pavement Damage from Super-Single and Singled-Out Dual Truck Tires" and sent his comments to NCHRP staff.

29. Osman-Hag Elsafi and Sreenivas Alampalli attended the "Fourth National Workshop on Bridge Research in Progress", Buffalo, NY, June 17-19, 1996. The workshop was sponsored by NSF and organized by SUNY Buffalo and the National Center for Earthquake Engineering Research, and attended by representatives from state DOTs, FHWA, AASHTO, NSF, universities, and private consulting companies. The workshop program included about 75 presentations and over 15 poster papers discussing ongoing bridge research and its future direction.

30. On June 24 and 25, 1996, Peter Bajorski attended the TRB's 11th Equipment Management Workshop in Syracuse, NY, and was invited to make a presentation on "Forward Lighting Configurations for Snowplows."

31. Wes Yang attended TRB Expert Task Group on LTPP Data Analysis Meeting on June 10-11, 1996 in Ithaca, NY.

32. Wes Yang attended NCHRP Project 10-44 "Non-destructive Testing to Determine Insitu Material Properties of Pavement Layers" panel meeting on June 21, 1996 in Washington, DC.

33. Sam Elrahman and Bob Perry completed the paper entitled, "Scientific Approach to Development and Implementation of Research Programs", which has been invited for presentation at the OECD conference on Transportation Research Programs in Lyon, France, October 1996.

34. Bob Perry and Bob Valenti attended the National Research Advisory Committee (RAC) meeting in Princeton, NJ, July 29, 31, 1996. Dr. Perry also chaired and attended several focus group and task force meetings held in conjunction with the national meeting.

35. D. Sandhu attended the panel meeting for NCHRP Project 9-11, "Addressing Segregation in HMA Pavements with QC/QA Programs", in Washington, DC July 29-30, 1996.

36. Julian Bendana was invited to serve on the NCHRP 1-35 project panel "Guidelines and Procedures to Aid State Highway Agencies in the Development of Pavement Performance Trends."

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $280,000

CLIENT: All Department Units

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01100881 TITLE : INFORMATION EXCHANGE
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT : VARIOUS
CONTRACTOR :

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 280000

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	229550	229550	280000	280000	204615	204615
TOTAL COSTS	229550	229550	280000	280000	204615	204615

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 11-01 ENGINEERING SOILS SURVEY

SCOPE: This project, in conjunction with the Soil Conservation Service (SCS), provides field sampling assistance, laboratory analysis, and engineering interpretation of the soil types encountered in a surveyed county. Field sampling of soils will be conducted in the counties where SCS is surveying. The laboratory analysis and interpretations for these soils is scheduled. Next year the field survey has been cancelled by SCS. However, funds will be needed to complete some existing laboratory work and investigate the SCS computerization of the data.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $5,000

CLIENTS: All Department Units

08/26/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01101881 TITLE : ENGINEERING SOILS SURVEY
SECTION: ADMINISTRATION INVESTIGATOR: REAGAN
CLIENT : SOILS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 9000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	1352	1352	9000	9000	6577	6577
TOTAL COSTS	1352	1352	9000	9000	6577	6577

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 11-02 INFORMATION EXCHANGE — LIBRARY OPERATIONS

SCOPE: This project covers activities performed by the Bureau's library staff which include accessing current technical information through the maintenance of a collection of technical literature and conducting inquiries to various technical information services, State universities and State libraries to obtain research source material. The following is a summary of some activities performed under this project during SFY 1995–96:

• Reference Questions	1,100
• Inter-Library Loans	501
• New Acquisitions	851
• Literature Searches	363
• Circulation	1,728

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $95,000

CLIENT: All Department Units

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THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01102881 TITLE : INFO EX-LIBRARY OPERATIONS
SECTION: ADMINISTRATION INVESTIGATOR: ADMINISTRATION
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 95000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	67488	67488	95000	95000	69423	69423
TOTAL COSTS	67488	67488	95000	95000	69423	69423

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 11-03 INFORMATION EXCHANGE — NEWSLETTERS

SCOPE: The Quarterly R&D Digest published since 1977 changed to Transportation R&D News with its 61st issue in January 1995, reflecting this Bureau's own new name. It continues to serve as a forum for announcements of new publications and new research studies, with occasional feature articles concerning the research program, and is distributed throughout NYSDOT, to FHWA, and to other states. This year, a new order form was designed for insertion in each issue, simplifying the ordering of new publications. Four issues were published during this program period.

In addition, the TNT technology transfer newsletter continued quarterly publication and distribution to all NYSDOT employees who have engineering titles. Its contents cover a broad range of technological innovation throughout the transportation world, with the intent of encouraging readers to seek further information and possible application within New York.

Finally, a new third newsletter ITS NEWS: Intelligent Transportation Systems for New York began publication with a six-page issue in Winter 1995. Planned as a semi-annual, it covers the introduction of "smart" transportation systems featuring information processing, communications electronics, and computer controls to improve safety, enhance mobility, minimize environmental impacts, and promote economic productivity. The second issue was published in this program period.

It should be noted that in this program period, the Bureau increased its schedule to production of ten newsletters annually.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $30,000

CLIENT: All Department Units

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PROJECT: R01103881 TITLE : INFO EX - NEWSLETTERS
SECTION: ADMINISTRATION INVESTIGATOR: ADMINISTRATION
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 30000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	19729	19729	30000	30000	21923	21923
TOTAL COSTS	19729	19729	30000	30000	21923	21923

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 11-04 INFORMATION EXCHANGE — LIBRARY SUPPORT

SCOPE: This project covers the acquisition of research resource material such as books, reports, periodicals, conference proceedings, etc. for the library.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $23,000

CLIENT: All Department Units

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PROJECT: R01104881 TITLE : INFO EX - LIBRARY SUPPORT
SECTION: ADMINISTRATION INVESTIGATOR: ADMINISTRATION
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 23000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	4778	4778	23000	23000	16808	16808
TOTAL COSTS	4778	4778	23000	23000	16808	16808

PROJECT: **12-0 CONSULTATION**

SCOPE: This project provides a means of rendering advice and/or services in various areas of engineering technology and research methodology, such as design of experiments, instrumentation, and statistical analysis, for which the Bureau staff is uniquely qualified or equipped. Some activities conducted under this project during the program period included:

1. Sreenivas Alampalli was contacted by Foster Miller, Inc. for the Bureau's cooperation in selecting and providing a bridge for instrumentation as part of an FHWA project titled "A Passive Fatigue Life Indicator for Highway Bridges." The information received regarding the instrumentation is being reviewed by Sreenivas Alampalli, Gongkang Fu, and the Structures Design & Construction Division staff.

2. Wes Yang participated in the technical evaluation of proposals for the FHWA Long-Term Pavement Performance Data Analysis contract as a representative of the AASHTO Joint Task Force on Pavements and LTPP ETG on November 20-21, 1995 in Washington, DC.

3. The analysis of the data obtained from re-inspection of 16 bridges, statewide, was completed. The results indicated no systematic or large differences in the ratings of state inspectors and consultants. On November 10, 1995, a memo summarizing the analysis and its results was sent to the Structures Division.

4. Osman Hag-Elsafi participated in an NCHRP Panel Meeting for Project D15-15 entitled "Collection and Presentation of Roadway Inventory Data", which was held November 4-5, 1995 in Washington, DC.

5. Wes Yang and Julian Bendaña attended a Weigh-in-Motion (WIM) meeting between the Planning Division and Technical Services Division headed by Louis Rossi and Paul Mack, respectively, January 10, 1996. During this meeting, a task force was formed. This task force's objectives were: 1) to estimate the number and location of new WIM systems throughout the state so that the axle loads and configuration can be predicted for pavement design, 2) to develop WIM specifications to contract their installation, 3) to investigate the WIM data analysis and process, and 4) to investigate maintenance strategies for the WIM systems. Wes Yang was appointed as a task force manager. Subsequent meetings were held to accomplish these objectives.

6. Wes Yang met with Bill Snyder of the Materials Bureau and Don Arcari of the Geotechnical Engineering Bureau to discuss a technical assistance request from Region 11 on the LIE rehabilitation project.

7. At the request of the Design Services Bureau, Jyotirmay Lall performed structural design checking of a manhole to be constructed at the Stewart International Airport.

8. On May 22, 1996, Michael Mathioudakis and Todd Dickson met with Barry Christopher (HITECH panelist on "Earth Retaining Systems Technology") and consultants from Hanley & Aldrich, to discuss potential contributions the Department can make to the new AASHTO Standard Specifications for Highway Bridges in topics related to mechanically stabilized wall systems.

9. A lane on the bridge carrying NY Route 5 over Union Ship Canal in the City of Buffalo was closed due to the discovery of cracks in the pre-cast concrete beams. Tom Moon of the Structures Division contacted Gongkang Fu to discuss possible factors of course and ways of reaction. Sreenivas Alampalli and Osman-Hag Elsafi joined in responding to their request for assistance.

   Sreenivas Alampalli, Osman-Hag Elsafi and Gongkang Fu attended the task force meetings and discussions. Sreenivas Alampalli is part of an emergency response team put together to respond to this situation for developing both short-term and long-term solutions. He assisted the team as required and found the consultants for inspecting the bridge for web cracking using instruments such as fibre scope. An RFP was sent to these consultants for an emergency contract and proposals are expected soon.

10. Gongkang Fu and Ruijia Mu met with Larry Brown, Design Quality Assurance Bureau, and representatives of Neenah Foundry and Syracuse Casting Sales Corp. in three separate meetings to discuss the issue of manhole-cover design and acceptance, and to define the scope of the research project to resolve the issue.

11. Sreenivas Alampalli attended a project kick-off meeting in New York City on July 2, 1996 along with representatives from Structures Design and Construction Division; FHWA; New York City DOT (Design, Construction, and Research groups), and Lehigh University. The discussion was focused on Phase III of the Williamsburg Bridge Orthotopic Decks testing program.

12. During the last week of July, Michael Mathioudakis, Guy Hildreth of the Materials Bureau, Norm Schips of the Design Quality Assurance Bureau, Lawrence Bednar of AK Steel, and CONTECH representatives visited five aluminized pipes along I-390 in

Monroe County. All pipes had alternate sections of galvanized steel and aluminized Type II steel pipe. Pipes were cored along the invert and coupons from both materials were obtained fro evaluation. The group also visited an experimental pipe where plates coated with various coating were bolted along the invert in 1981. Aluminized Type II steel and aluminum plates are in excellent condition with no visible abrasion and corrosion. Other coatings (NEXON, Beth-cu-loy, epoxy) are peeling off along the invert.

13. Michael Mathioudakis and Guy Hildreth also visited a 78" diameter galvanized steel pipe installed in 1978 under Route 36 in Livingston County. This pipe was designed to extend an existing concrete-box pipe due to road realignment. A sinkhole on the shoulder and further distress on the roadway had resulted due to deterioration in the last 15 feet of the galvanized steel pipe. The invert in this section is practically none existent due to combined action of corrosion and abrasion. As a result of this, supported potential caused of this problem and proposed remedial actions that are being considered by the Materials Bureau.

14. Michael Mathioudakis provided information on culvert durability studies conducted by New York State and on the use of the Panametrics ultrasonic thickness gage to Paul Kokos from PennDOT Design and Phil Hansen from the Province of the New Brunswick Ministry of Transportation.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $500,000

CLIENT: All Department Units

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PROJECT: R01200881 TITLE : CONSULTATION
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT : VARIOUS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 500000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	349018	349018	500000	500000	365385	365385
TOTAL COSTS	349018	349018	500000	500000	365385	365385

PROJECT: R01222881 TITLE : FHWA-LTPP
SECTION: MATER./PAVING INVESTIGATOR: DR. YANG
CLIENT : N/A
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 200000

PROJECT INITIATION DATE : 07/07/1988
STUDY PROPOSAL DUE : 01/03/1989
STUDY PROPOSAL COMPLETED: 07/12/1988
STUDY PROPOSAL APPROVED : 07/12/1988
ORIGINAL COMPLETION DATE: 03/31/1993
REVISED COMPLETION DATE : 09/30/1998
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	32382	246586	40520	440520	29611	367571
TOTAL COSTS	32382	246586	40520	440520	29611	367571

OBJECTIVE: To provide the staffing, expertise, and all necessary technical assistance for FHWA-LTPP related activities (e.g., GPS/SPS, Seasonal Monitoring Program and WIM, etc.) in New York State.

PROGRESS: All active GPS sites and SPS-8 sites were restriped and numbers repainted. The GPS sites on Rt 3, St. Lawrence Co. and Rt 4, Washington Co. are in the process of being overlaid. All testing of the ACC from the SPS-8 site has been completed and the results are being compiled and summarizd.

SIX-MONTH PLAN: Continue to coordinate activities between the Department and FHWA's contractor. Assure all signs, numbers, and markings are in place at GPS and SPS-8 sites. Transmit inventory data on all GPS and the SPS-8 sections to FHWA'S contractor as it becomes available.

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
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IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01228881 TITLE : ERTAP CONSULTATION
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 15000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	4688	4688	15000	15000	10962	10962
TOTAL COSTS	4688	4688	15000	15000	10962	10962

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PROJECT: R01238881 TITLE : CONSULTATION (STATISTICS)
SECTION: TECH/TRAN INVESTIGATOR: DR. SANDHU
CLIENT : ALL SECTIONS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 82500

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	79419	79419	82500	82500	60288	60288
TOTAL COSTS	79419	79419	82500	82500	60288	60288

PROJECT: R01248881 TITLE : SHRP SUPERPAVE
SECTION: MATER./PAVING INVESTIGATOR: DR. HOSSAIN
CLIENT : MATERIALS BUREAU
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 250000

PROJECT INITIATION DATE : 07/18/1994
STUDY PROPOSAL DUE : 01/14/1995
STUDY PROPOSAL COMPLETED: 07/18/1994
STUDY PROPOSAL APPROVED : 07/18/1994
ORIGINAL COMPLETION DATE: 09/30/1999
REVISED COMPLETION DATE : 09/30/1999
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	116600	129098	150000	250000	109615	109615
TOTAL COSTS	116600	129098	150000	250000	109615	109615

OBJECTIVE: To provide the staffing, the expertise and the necessary technical assistance to coordinate such Superpave-related activities as Operational Goal #94-5, testing and mix design plans, and QA/QC Program, etc.

PROGRESS: Attended Superpave Operational Goal Meetings; provide technical support regarding FWD testing for Superpave projects.

SIX-MONTH PLAN: Continue providing technical assistance to Superpave projects, and perform FWD testing for structural evaluation of pavements related to Superpave jobs.

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PROJECT: R01249881 TITLE : FALLING WEIGHT DEFLECTOMETER
SECTION: MATER./PAVING INVESTIGATOR: DR. YANG/DR. HOSSAIN
CLIENT : SOIL MECHANICS BUREAU
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 150000

PROJECT INITIATION DATE : 09/30/1994
STUDY PROPOSAL DUE : 03/29/1995
STUDY PROPOSAL COMPLETED: 10/01/1994
STUDY PROPOSAL APPROVED : 10/01/1994
ORIGINAL COMPLETION DATE: 09/30/1997
REVISED COMPLETION DATE : 09/30/1997
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	64864	140487	100000	300000	73077	173077
TOTAL COSTS	64864	140487	100000	300000	73077	173077

OBJECTIVE: To provide the staffing, expertise, and all necessary technical assistance to coordinate the following FWD-related activities:

1. Perform FWD testing in selected pavement sites (rehabilitation and monitoring).
2. Develop a procedure for collection, analysis, and interpretation of FWD data.

PROGRESS: 1996 FWD tests were completed, and 90% of the data analysis has been completed.

SIX-MONTH PLAN: Complete 1997 FWD tests. Complete operation guidelines. Begin 1997 FWD analysis.

08/28/1996
THRU PAY PERIOD S 6/F19
IAS RUN DATE IS 06/27/1996

NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
PROJECT STATUS REPORT
FHWA SEMI-ANNUAL

PROJECT: R01252881
SECTION: TECH/TRAN

TITLE : GEOSYNTHETIC SLOPES & RETAIN WALLS
INVESTIGATOR: DR. MATHIOUDAKIS
CLIENT : GEOTECHNICAL ENGINEERING BUREAU
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 45000

PROJECT INITIATION DATE : 11/22/1994
STUDY PROPOSAL DUE : 05/21/1995
STUDY PROPOSAL COMPLETED: 11/22/1994
STUDY PROPOSAL APPROVED : 11/22/1994
ORIGINAL COMPLETION DATE: 03/31/1996
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	2846	9502	7000	45000	5115	10115
TOTAL COSTS	2846	9502	7000	45000	5115	10115

OBJECTIVE: To develop guidelines for design and acceptance of geosynthetics installed in slopes and retaining walls.

PROGRESS: NCHRP reports, FHWA design guidelines, and national standards issued in June of 1996 were reviewed, and a literature review conducted.

SIX-MONTH PLAN: We will be working on modifying these standards so that they conform to our current specifications.

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PROJECT: R01256881 TITLE : COST-EFF USE OF SHLDER RUMBLE STRIP
SECTION: MATER./PAVING INVESTIGATOR: MORGAN
CLIENT : DESIGN/TRAFFIC & SAFETY DIVISIONS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 57000

PROJECT INITIATION DATE : 04/13/1995
STUDY PROPOSAL DUE : 10/10/1995
STUDY PROPOSAL COMPLETED: 04/13/1995
STUDY PROPOSAL APPROVED : 04/13/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1997
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	3499	4157	9000	57000	6577	44577
TOTAL COSTS	3499	4157	9000	57000	6577	44577

OBJECTIVE: Compile existing information on rumble strips and confirm or upgrade the current Department policy.

PROGRESS: Completed review of material and began writing summary.

SIX-MONTH PLAN: Complete writing summary.

PROJECT: R01257881 TITLE : LOSS OF ENTRAINED AIR HRD CONCRETE
SECTION: MATER./PAVING INVESTIGATOR: CHOU
CLIENT : MATERIALS BUREAU
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 50000

PROJECT INITIATION DATE : 05/19/1995
STUDY PROPOSAL DUE : 11/15/1995
STUDY PROPOSAL COMPLETED: 05/19/1995
STUDY PROPOSAL APPROVED : 05/19/1995
ORIGINAL COMPLETION DATE: 09/30/1997
REVISED COMPLETION DATE : 09/30/1998
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	22434	32123	30000	80000	21923	31923
TOTAL COSTS	22434	32123	30000	80000	21923	31923

OBJECTIVE: To develop a user-friendly manual to assist concrete mix designers and concrete manufactures in determining under what conditions the prescribed air content and the spacing factor are lost in hardened concrete (water/cement ratio, aggregate, vibration, mix action, admixtures, slump, temperature, etc.) and how the problems can be avoided.

PROGRESS: (1) Investigated, by literature search, how the air-void system in hardened concrete affects the concrete freeze-thaw durability and compressive strength. (2) Investigated the mechanism of how factors (such as slump, vibration, mixing action, air-entraining agents, etc.) affects the phenomena of losing prescribed air in hardened concrete. (3) Studied surfactant science and technology and its applications to air-entraining to concrete to understand the inter-relationship and correlation of those factors in affecting the phenomena of losing prescribed air in hardened concrete. (4) Conceptually designed laboratory experiments for evaluating and selecting the different air-entraining agents and for investigating the compatibility among the different concrete admixtures.

SIX-MONTH PLAN: (1) A draft report will be completed. This report will provide information on how factors such as slump, vibration, water/cement ratio, mixing action, temperature, and air-entraining agents and other admixtures (set-controlling chemicals, accelerating admixtures, retarding admixtures, mineral admixtures, water-reducing surfactant, and superplasticizers) affect the air-void system in concrete and the stability of the air-void system. This report also will provide information on the compatibility among the different admixtures for controlling the air-void system in concrete based on current surface chemistry research. The laboratory experiment will incorporate designs and plans for evaluating and selecting air-entraining agent, investigating the compatibility among the different concrete admixture, and verifying hypothesis and conclusions from existing research. Finally, a useful guideline will be developed to assist concrete mix designers and manufacturers for controlling the air-void system in concrete. (2) Conduct other laboratory experiments.

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IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01259881 TITLE : FULL-DEPTH SHEAR KEY PERFORMANCE
SECTION: STRUCTURES INVESTIGATOR: J. LALL
CLIENT : STRUCTURES DESIGN & CONTRUCTION DIV
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 40000

PROJECT INITIATION DATE : 03/13/1996
STUDY PROPOSAL DUE : 09/09/1996
STUDY PROPOSAL COMPLETED: 03/13/1996
STUDY PROPOSAL APPROVED : 03/13/1996
ORIGINAL COMPLETION DATE: 03/31/1997
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	9900	9900	30000	40000	21923	21923
TOTAL COSTS	9900	9900	30000	40000	21923	21923

OBJECTIVE: To determine if the full-depth shear key design is satisfactory.

PROGRESS: Responses from prepared survey were received from all the regions.

SIX-MONTH PLAN: Synthesize all the information collected and decide a future course of action in consultation with the client. Prepare a research report summarizing the project data.

PROJECT: R01260881 TITLE : FLD INVEST SVS LIFE CORR STEEL CULV
SECTION: TECH/TRAN INVESTIGATOR: DR. SANDHU
CLIENT : DESIGN DIVISION
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 35000

PROJECT INITIATION DATE : 03/13/1996
STUDY PROPOSAL DUE : 09/09/1996
STUDY PROPOSAL COMPLETED: 03/13/1996
STUDY PROPOSAL APPROVED : 03/13/1996
ORIGINAL COMPLETION DATE: 08/01/1996
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	17385	17385	18000	35000	13154	13154
TOTAL COSTS	17385	17385	18000	35000	13154	13154

OBJECTIVE: The goal of this study is to verify the assumptions made for metal loss rates in the design of corrugated steel culverts. A larger sample of the culverts included in the original study will be loacated and visited to measure remaining metal thickness and observe their field performance. The study will concentrate on Zone 2 culverts since the statistical analysis suggested a larger discrepancy in the metal-loss rates for this geographical area.

PROGRESS: Most of the culverts scheduled to be visited have been identified and located. Field procedures are finalized. Field work could not be started due to equipment failures.

SIX-MONTH PLAN: Complete field work, analyze data, and report the results.

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PROJECT: R01261881 TITLE : JOINTS BR DECK HOT-MIX ASPHALT
SECTION: STRUCTURES INVESTIGATOR: D. ELWELL
CLIENT : MATERIALS BUREAU/STRUCTURES DIV.
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 40000

PROJECT INITIATION DATE : 06/10/1996
STUDY PROPOSAL DUE : 12/07/1996
STUDY PROPOSAL COMPLETED: 06/10/1996
STUDY PROPOSAL APPROVED : 06/10/1996
ORIGINAL COMPLETION DATE: 06/30/1997
REVISED COMPLETION DATE : 06/30/1997
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	0	20000	40000	14615	14615
TOTAL COSTS	0	0	20000	40000	14615	14615

OBJECTIVE: (1) To understand current and expected future use of HMA overlays for bridge decks; to examine the performance of joints on these bridge decks; to understand the existence of regional policies on joints for HMA overlaid bridge decks. (2) To develop sound criteria for selecting joint types for HMA overlaid decks if a need for more formal criteria is identified through the survey results. Consideration should be given to construction cost, life-cycle cost, and overall performance.

PROGRESS: Project initated June 1996.

SIX-MONTH PLAN: Conduct a survey of the Regions to address the first listed objective. Conduct a literature review. Collect relevant information from clients and other Main Office personnel.

PROJECT: R01262881 TITLE : ACCEPT CRITERIA CAST IRON ARTICLES
SECTION: STRUCTURES INVESTIGATOR: DR. MU
CLIENT : DESIGN/MATERIALS DIVISIONS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 30000

PROJECT INITIATION DATE : 08/09/1996
STUDY PROPOSAL DUE : 02/05/1997
STUDY PROPOSAL COMPLETED: 08/09/1996
STUDY PROPOSAL APPROVED : 08/09/1996
ORIGINAL COMPLETION DATE: 01/31/1997
REVISED COMPLETION DATE : 01/31/1997
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	0	15000	30000	10962	10962
TOTAL COSTS	0	0	15000	30000	10962	10962

OBJECTIVE: To develop a set of acceptance criteria for cast iron articles; possible future research may include a design procedure for the design and analysis of cast iron articles for the Department.

PROGRESS: Project initiated August 1996.

SIX-MONTH PLAN: Conduct a literature review and a survey of all other state DOTs. Review pertinent specifications, and the test programs from different manufacturers. Develop a new set of acceptance criteria for accepting cast iron articles supplied to the Department.

PROJECT: **13-0 IMPLEMENTATION**

SCOPE: Activities conducted under this project are directed at cooperating with Department staff in implementing the results of research conducted by the Bureau and other agencies. In the case of in–house research, this project permits "implementation follow–through" after the research projects are completed and terminated.

Activities will be undertaken primarily by Bureau staff and members of appropriate Department Technical Working Groups who will provide guidance on packaging, planning, promotion, and delivery strategies needed to assess new technologies or products. Bureau staff are available to assist end-users on both the evaluation and initiation of these new products and technologies, and provide a feedback loop for positive communication of findings.

1. SHRP Implementation Committee members were asked to update their product evaluation status reports. TR&DB compiled the 1995-96 Special Report when all members responded. The report was published in April 1996.

2. The software, documentation and the Pentium computer for the TRIS-SP&R Integrated Research Information System, was received from TRB. This system will allow the states to provide information on research-in-progress for inclusion in TRIS, through AASHTO VAN. The testing and evaluation of the system started in February.

3. On January 7, 1996, Bob Valenti attended a SHRP Focus Group Meeting in Washington, DC sponsored by FHWA. The meeting was chaired by a facilitator hired by FHWA to improve the implementation of SHRP products.

4. All Department SHRP lead-evaluators have provided Bob Valenti with updates on the progress of product evaluations. Approximately six additional products were implemented in FY 95-96, including full implementation of FWD technology. The Materials Bureau also reports significant progress under Superpave.

5. On March 13, 1996, Bob Valenti attended a Local Bridge Conference Steering Committee meeting in Syracuse, NY. He reported at this meeting that the subcommittee he chairs established a schedule and a team to develop the course on Bridge Inspection and Maintenance.

6. Sreenivas Alampalli completed the final draft of the guidelines developed for project data archival. It was transmitted to Technical Services Division after review by Robert J. Perry, Robert Valenti, Dan McAuliffe and Don Emerich. This concludes the work for the goal

"Data Management Procedures." These guidelines will become part of the Bureau's Policies and Procedures Manual. These guidelines have also been applied to a research project as part of implementation. All the personnel in the Bureau are aware of these guidelines and have access to these files. These files are intended to serve as an example for principal investigators to archive their project data from now on.

7. Osman Hag-Elsafi and David Elwell responded to inquiries about the project from Regions 8, 9, and 10, and the New York State Thruway Authority.

8. Osman-Hag Elsafi, David Elwell, and Orlando Picozzi of Materials Bureau tested a 3-ft by 3-ft panel consisting of recycled plastic lumber sheathing supported by a metal frame (resembling a typical section of the wall systems proposed in the project). The testing was conducted at the Department's environmental chamber in Latham, Electronic Testing Laboratory, Traffic and Safety, and intended to observe material and system performance under cycles of extreme temperatures (from -30 °F to 100 °F at a rate of 1 °F/minute). No significant problems were observed after eleven such cycles, even when the chamber temperature was raised to its maximum of 165 °F at the end of the test. The efforts of Albert Bonificio, Mike Naumeic, and Harry Greenburg, Electronic Testing Laboratory, during this testing are greatly appreciated.

9. Sreenivas Alampalli met with Richard Stemple, Design Quality Assurance Bureau, and was contacted by James Bryden, Construction Division, to discuss the findings and recommendations of the project, "Monitoring of Loads on Traffic Signal Support Structures." They generally agree with our findings. The Construction Division is considering either issuing an advisory to EICs or adding quality control procedures to future updates of the current specifications to maintain minimum design sag during construction. TR&DB staff will assist in this matter as requested. This project is completed.

10. On July 9, 1996, the SHRP Implementation Committee meeting was held. Bob Valenti prepared and circulated a report summarizing the main findings and recommendations from the meeting. The committee decided to host three showcase workshops sponsored by FHWA (on bridge durability, bridge evaluation and repair methodologies, and high-performance concrete). The committee also agreed to consider purchasing some equipment under capital construction contracts based on an FHWA policy that allows such purchases when the equipment implements new technology.

STATUS: Continuing

1996–97 COSTS: $15,000

CLIENT: All Department Units

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PROJECT: R01300881 TITLE : IMPLEMENTATION

SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS

CLIENT : VARIOUS

CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1

ACTUAL STUDY PROPOSAL AMOUNT : 0

APPROVED ORIGINAL BUDGET AMOUNT: 35000

PROJECT INITIATION DATE : 10/01/1995

STUDY PROPOSAL DUE : 03/29/1996

STUDY PROPOSAL COMPLETED: 10/01/1995

STUDY PROPOSAL APPROVED : 10/01/1995

ORIGINAL COMPLETION DATE: 09/30/1996

REVISED COMPLETION DATE : 09/30/1996

REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	8445	8445	35000	35000	25577	25577
TOTAL COSTS	8445	8445	35000	35000	25577	25577

PROJECT: R01310881 TITLE : IMPLEMENTATION OF GLASGRID
SECTION: TECH/TRAN INVESTIGATOR: VALENTI
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 40000

PROJECT INITIATION DATE : 10/01/1992
STUDY PROPOSAL DUE : 03/30/1993
STUDY PROPOSAL COMPLETED: 10/01/1992
STUDY PROPOSAL APPROVED : 10/01/1992
ORIGINAL COMPLETION DATE: 03/31/1995
REVISED COMPLETION DATE : 09/30/1997
REVISION NUMBER : 4

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	4229	48019	13780	60000	10070	45290
TOTAL COSTS	4229	48019	13780	60000	10070	45290

OBJECTIVE: Evaluate Glasgrid's ability to retard reflective cracking and compare its performance and cost-effectiveness to sections with 1" thicker overlays.

PROGRESS: Crack surveys were conducted in April, August, December of 1995, and June 1996.

SIX-MONTH PLAN: Conduct crack surveys in Fall 1996 and Spring 1997.

PROJECT: R01311881 TITLE : HYPERTEXT IMPL FOR CONST MANUALS
SECTION: ADMINISTRATION INVESTIGATOR: TORRE
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 40000

PROJECT INITIATION DATE : 01/31/1993
STUDY PROPOSAL DUE : 07/30/1993
STUDY PROPOSAL COMPLETED: 02/01/1993
STUDY PROPOSAL APPROVED : 04/01/1993
ORIGINAL COMPLETION DATE: 04/30/1994
REVISED COMPLETION DATE : 09/30/1997
REVISION NUMBER : 2

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	1148	15000	30000	10962	10962
TOTAL COSTS	0	1148	15000	30000	10962	10962

OBJECTIVE: Implement a microcomputer-based hypertext database for the Construction Supervision Manual (CSM) and Manual of Uniform Record Keeping (MURK).

PROGRESS: This SPR study is tied to a Construction Division 1993 Operational Goal of CSM/MURK updates. Updating of the manuals was delayed. The final draft copy of the manuals was distributed in May 1996 to Regional Offices for review.

SIX-MONTH PLAN: It is expected this project will be completed in September 1997. Main office Construction Division staff will begin creation of hypertext in the Fall of 1996. The use of Rutgers Univesity staff has been determined to be unnecessary.

PROJECT: 13-14 IMPLEMENTATION OF SHRP PRODUCTS

SCOPE: This project covers all activities performed by the Bureau, Department Implementation Committees, and end-users for evaluation and implementation of SHRP products. Scheduling, field evaluation, and final reporting activities for all SHRP products will be reported under this function.

Activities conducted under this project during the program year included:

1. The evaluation and implementation of fifteen SHRP products including Falling Weight Deflectometer and Road Weather Information Systems.

2. The third SHRP Implementation progress report on the evaluation of SHRP products was published in May, 1996.

3. The first of two scheduled 1996 meetings of the Department's SHRP Implementation Committee, chaired by Paul Mack, was convened on July 9, 1996.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $50,000

CLIENT: All Department Units

PROJECT: R01314881 TITLE : IMPLEMENTATION -SHRP PRODUCTS
SECTION: TECH/TRAN INVESTIGATOR: VALENTI
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 50000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	24402	24402	0	50000	0	0
TOTAL COSTS	24402	24402	0	50000	0	0

OBJECTIVE: Ensure the timely evaluation and implementation of SHRP products.

PROGRESS: Fifteen products fully implemented. Ten Level I Superpave mix design projects scheduled for construction in 1996.

SIX-MONTH PLAN: Schedule FHWA showcase contracts. Continue evaluation of products and incrementally report findings.

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: **14-01 Local Technology Assistance Program**

SCOPE: Cornell University, sponsored by the Department of Transportation and FHWA, has been contracted to provide technical engineering services to local municipal highway personnel. These services are provided through formal instructional classes, direct mailings, conferences, and phone calls.

Activities conducted under this project during the program year included:

1. Cornell published its annual report highlighting its CY1995 accomplishments. This report was reviewed by Transportation Research and forwarded to FHWA.

2. Upon Transportation Research recommendation, FHWA approved the 1996 Work Plan for LTAP.

3. On October 25, 1995, Robert Valenti attended the LTAP Planning Committee Meeting in Syracuse, New York. During this meeting, the agenda for the June, 1996 Annual Highway School was determined.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $10,000

CLIENT: Municipal highway officials in all local jurisdictions.

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PROJECT:	R01401881	TITLE :	LOCAL TECHNICAL ASSISTANCE PROGRAM	PROJECT INITIATION DATE :	10/01/1995
SECTION:	TECH/TRAN	INVESTIGATOR:	VALENTI	STUDY PROPOSAL DUE :	03/29/1996
		CLIENT :		STUDY PROPOSAL COMPLETED:	10/01/1995
		CONTRACTOR :		STUDY PROPOSAL APPROVED :	10/01/1995
				ORIGINAL COMPLETION DATE:	09/30/1996
	APPROVED STUDY PROPOSAL AMOUNT :	1		REVISED COMPLETION DATE :	09/30/1996
	ACTUAL STUDY PROPOSAL AMOUNT :	0		REVISION NUMBER :	0
	APPROVED ORIGINAL BUDGET AMOUNT:	10000			

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	5551	5551	0	10000	0	0
TOTAL COSTS	5551	5551	0	10000	0	0

OBJECTIVE: Provide technical engineering services to local municipal highway personnel through contractual agreement with Cornell University.

PROGRESS: 1996 Annual Highway School conducted. Commenced process to designate 1997 LTAP center.

SIX-MONTH PLAN: Provide Technology Transfer activities as necessary. Plan 1997 School. Continue process to designate LTAP center for 1997 and beyond.

PROJECT: 15-01 ENGINEERING COMPUTER SYSTEMS SUPPORT

SCOPE: This project covers all activities performed by the Bureau's Senior Computer Analyst and Computer Coordinator, including planning, management, and maintenance of the hardware and software for the Bureau's computer network and personal computers. This function also includes software development and programming for Engineering Research projects and consultations.

Activities conducted under this project during the program year include:

1. GroupWise e-mail system has been installed for all Bureau personnel.

2. Decentralization of user software has been achieved by removing general user software from the network (i.e. WordPerfect, Lotus, etc.) and installing them directly on the PCs. Network problems then will not cause major work disruptions.

3. A more reliable tape backup system, which backs up changed files every night and the entire system once a week, has been established. This will provide a more current version of the system at any time and will make restorations easier.

4. TRIS-SP&R Integrated Research Information System, which is to allow the states to provide information on research-in-progress for inclusion in TRIS, through AASHTO VAN, has been installed, tested, and evaluated. Three other research-in-progress search systems (from Washington State, TRB , and TAC) have also been tested and evaluated.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $86,000

CLIENT: All Department Units

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PROJECT: R01501881 TITLE : ENGINEERING COMPUTER SYS SUPPORT
SECTION: TECH/TRAN INVESTIGATOR: DR. SANDHU
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 86000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	54397	54397	86000	86000	62846	62846
TOTAL COSTS	54397	54397	86000	86000	62846	62846

PROJECT: R02000881 TITLE : CONTRACT RESEARCH
SECTION: ADMINISTRATION INVESTIGATOR: CAMPBELL
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 1301000

PROJECT INITIATION DATE : 10/01/1993
STUDY PROPOSAL DUE : 03/30/1994
STUDY PROPOSAL COMPLETED: 10/01/1993
STUDY PROPOSAL APPROVED : 10/01/1993
ORIGINAL COMPLETION DATE: 09/30/1994
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	21378	162127	200000	200000	146154	146154
TOTAL COSTS	21378	162127	200000	200000	146154	146154

OBJECTIVE: To conduct a program of contract research to address Department needs which can not be handled by the Engineering Research and Development Bureau.

PROGRESS: FIRST-CYCLE PROJECTS - Work has begun on all the below-listed projects and the first and second deliverables have been received for projects 1 and 2. Three deliverables have been received for project 3. Second contract extensions have been requested by the Principal Investigators for ongoing projects 1, 2, and 3 listed below. "Improved Visibility for Snow Plow Operations," has been completed. The final report has been received and approved by the Department.

1. Effective Marketing of Transit and HOV
2. Cost Effectiveness of Consolidating Government Services
3. Review and Development of Life-Cycle Costs and Network Analysis

UNIVERSITY RESEARCH CONSORTIUM - Negotiations completed, contract approved.

SIX-MONTH PLAN: For the University Research Consortium: Research program selected, work begun.

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PROJECT: R02003881 TITLE : COST EFF OF CONSOLIDAT'G GOV HY SVS
SECTION: TECH/TRAN INVESTIGATOR: E. FAHRENKOPF
CLIENT : EQUIPMENT MANAGEMENT
CONTRACTOR : CORNELL UNIVERSITY

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 59030

PROJECT INITIATION DATE : 04/22/1994
STUDY PROPOSAL DUE : 10/19/1994
STUDY PROPOSAL COMPLETED: 01/27/1995
STUDY PROPOSAL APPROVED : 07/20/1995
ORIGINAL COMPLETION DATE: 03/31/1996
REVISED COMPLETION DATE : 10/15/1996
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	11484	11484	41310	59030	30188	30188
TOTAL COSTS	11484	11484	41310	59030	30188	30188

OBJECTIVE: To make recommendations for changes in the structuring of State aid payments and other intergovernmental transfers in order to encourage consolidation of highway services.

PROGRESS: Deliverables 1 and 2 received; case studies selected and research design completed.

SIX-MONTH PLAN: Contract extension approved, final report and recommendations received. Project completed.

PROJECT: R02004881 TITLE : EFF MKT OF TRANSIT SYS AND HOV
SECTION: TECH/TRAN INVESTIGATOR: R. SVEJKOVSKY
CLIENT : REG 3 PLANNING & PROGRAM DEV
CONTRACTOR : CORNELL UNIVERSITY

PROJECT INITIATION DATE : 04/22/1994
STUDY PROPOSAL DUE : 10/19/1994
STUDY PROPOSAL COMPLETED: 01/27/1995
STUDY PROPOSAL APPROVED : 07/20/1995
ORIGINAL COMPLETION DATE: 03/31/1996
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 2

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 127055

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	41576	41774	60850	127055	44467	44467
TOTAL COSTS	41576	41774	60850	127055	44467	44467

OBJECTIVE: To discover and recommend effective outreach programs and policy actions needed to achieve a shift to intermodal transportation systems.

PROGRESS: First and second deliverables received, summary reports of the Characteristics of the Study Area, and specific congestion areas' size and impact on productivity, air quality and energy consumption identified.

SIX-MONTH PLAN: Contract extension approved; interim and final reports received and approved. Project completed.

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PROJECT:	R02005881	TITLE :	REV & DEV LIFE-CYCLE COST & NETW	PROJECT INITIATION DATE :	04/22/1994
SECTION:	TECH/TRAN	INVESTIGATOR:	J.SHUFON	STUDY PROPOSAL DUE :	10/19/1994
		CLIENT :	STRATEGIC PLANNING	STUDY PROPOSAL COMPLETED:	01/27/1995
		CONTRACTOR :	CORNELL UNIVERSITY	STUDY PROPOSAL APPROVED :	07/20/1995
				ORIGINAL COMPLETION DATE:	10/31/1996
	APPROVED STUDY PROPOSAL AMOUNT :		1	REVISED COMPLETION DATE :	12/31/1996
	ACTUAL STUDY PROPOSAL AMOUNT :		0	REVISION NUMBER :	0
	APPROVED ORIGINAL BUDGET AMOUNT:		130325		

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	25065	25897	85250	130325	62298	62298
TOTAL COSTS	25065	25897	85250	130325	62298	62298

OBJECTIVE: To create a step-by-step manual of procedures and data requirements to perform life-cycle cost and network analysis for New York State Pavements.

PROGRESS: First three deliverables received and approved - recommendations for improvement in Department's project and network level life-cycle cost analysis procedures.

SIX-MONTH PLAN: Contract extension approved; Interium Reports 1, 2, and 3 received and approved - draft of prototype user's manual. Project completed.

PROJECT: R02006881 TITLE : LATERAL PROTECT SHORT TERM WK ZONES
SECTION: TECH/TRAN INVESTIGATOR: D. MENCUCCI
CLIENT : SAFETY & HEALTH
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 160000

PROJECT INITIATION DATE : 04/22/1994
STUDY PROPOSAL DUE : 10/19/1994
STUDY PROPOSAL COMPLETED: 11/11/1911
STUDY PROPOSAL APPROVED : 11/11/1911
ORIGINAL COMPLETION DATE: 11/11/1911
REVISED COMPLETION DATE : 11/11/1911
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	0	160000	160000	116923	116923
TOTAL COSTS	0	0	160000	160000	116923	116923

OBJECTIVE: To develop and test a prototype moving lateral intrusion barrier for short-term and moving highway work zones.

PROGRESS: Contractor selected and approved; Scope of Services developed.

SIX-MONTH PLAN: Negotiations completed. Contract approved, work begun.

SECTION II

Experimentation Program
Type A&B Continuing Studies

PROJECT: R21401881 TITLE : PERF OF 2 RUBBER-MOD ASPH OVERLAYS
SECTION: MATER./PAVING INVESTIGATOR: VANBRAMER
CLIENT : MATERIALS BUREAU
CONTRACTOR :

PROJECT INITIATION DATE : 02/28/1991
STUDY PROPOSAL DUE : 08/27/1991
STUDY PROPOSAL COMPLETED: 09/20/1991
STUDY PROPOSAL APPROVED : 01/24/1992
ORIGINAL COMPLETION DATE: 03/31/1995
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 3

APPROVED STUDY PROPOSAL AMOUNT : 2500
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 252500

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	13718	149016	20000	252500	14615	237115
TOTAL COSTS	13718	149016	20000	252500	14615	237115

OBJECTIVE: To monitor the performance of the two R-M-A test sites and to estimate service life and performance characteristics.

PROGRESS: The Section review of the final report has been completed and the first draft edited.

SIX-MONTH PLAN: Complete editing of the final report; publish and distribute.

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PROJECT: R22401881 TITLE : DEV OF OVERLAY DESIGN PROCE FOR NYS
SECTION: MATER./PAVING INVESTIGATOR: DR. BENDAÑA
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 5000
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 106000

PROJECT INITIATION DATE : 12/02/1993
STUDY PROPOSAL DUE : 05/31/1994
STUDY PROPOSAL COMPLETED: 07/06/1994
STUDY PROPOSAL APPROVED : 11/08/1994
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1999
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	53405	118329	65000	300000	47500	106500
TOTAL COSTS	53405	118329	65000	300000	47500	106500

OBJECTIVE: To develop an overlay design procedure suitable for NYS and acceptable to FHWA.

PROGRESS: Currently, we are working on developing/selecting performance models for use in NYS. These models will estimate allowable number of load repetitions in term of 80 kN Equivalent Signle Axle Loads. Also, they will be calibrated with actual pavement performance data. As more data are collected for the NYSDOT monitoring program, the model will be updated in accordance.

SIX-MONTH PLAN: Continue the study according to the work plan.

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PROJECT: R22501881 TITLE : HYDR-FRAC TEST APPAR & PROC DET AGG
SECTION: MATER./PAVING INVESTIGATOR: DR. ELKORDY
CLIENT : MATERIALS
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 5000
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 200000

PROJECT INITIATION DATE : 01/24/1994
STUDY PROPOSAL DUE : 07/23/1994
STUDY PROPOSAL COMPLETED: 04/11/1994
STUDY PROPOSAL APPROVED : 06/10/1994
ORIGINAL COMPLETION DATE: 06/30/1996
REVISED COMPLETION DATE : 06/30/1998
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	17104	65691	35000	200000	25577	70577
TOTAL COSTS	17104	65691	35000	220000	25577	90577

OBJECTIVE: To develop a simplified test chamber. The SHRP device is cumbersome, and would be difficult to assemble/disassemble as required for the test. To develop an automated test procedure, which will decrease the time required to perform the SHRP test. To interpret results from the new test procedure and apparatus. To determine the relationships between the hydraulic-fracture test and a) the magnesium-sulfate test, b) the freeze-thaw test, and c) actual aggregate performance. The expected speed of this procedure and a direct correlation of its results with other procedures would be a major improvement.

PROGRESS: 100% assembled. M. Elkordy is taking over this project; plan is unchanged, however, budgetary restraints have hindered testing in the last six-months.

SIX-MONTH PLAN: Acquire automation software and begin testing.

PROJECT: R22601881 TITLE : PILE LD DIS EARTH PRESS INTE ABUT
SECTION: STRUCTURES INVESTIGATOR: DR. ALAMPALLI
CLIENT : STRUCTURES D&C,GEOTECHNICAL
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 250000

PROJECT INITIATION DATE : 06/12/1996
STUDY PROPOSAL DUE : 12/09/1996
STUDY PROPOSAL COMPLETED: 08/31/1996
STUDY PROPOSAL APPROVED : 08/31/1996
ORIGINAL COMPLETION DATE: 12/31/1998
REVISED COMPLETION DATE : 12/31/1998
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	0	10000	250000	7308	7308
TOTAL COSTS	0	0	10000	250000	7308	7308

OBJECTIVE: To obtain reliable pile load-distribution and earth pressure distribution for structural design, including the effects of factors such as thermal stresses and skew.

PROGRESS: Project initiated June 1996. A study proposal and a survey questionnaire to collect data for existing practices has been prepared.

SIX-MONTH PLAN: Conduct a literature search. Survey other states for existing practices. Collect relevant information from clients. Perform preliminary analysis and design experimentation.

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
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PROJECT: R19201881 TITLE : EFFECTIVENESS HAND SIGNAL DEVICES
SECTION: MATER./PAVING INVESTIGATOR: DR. SANDHU
CLIENT : MAINTENANCE
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 5000
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 139800

PROJECT INITIATION DATE : 07/24/1985
STUDY PROPOSAL DUE : 01/20/1986
STUDY PROPOSAL COMPLETED: 11/25/1985
STUDY PROPOSAL APPROVED : 01/31/1986
ORIGINAL COMPLETION DATE: 03/31/1988
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 11

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	0	133373	300	139800	219	133719
TOTAL COSTS	0	133373	300	139800	219	133719

OBJECTIVE: This project has three specific objectives: (1) to determine the relative effectiveness of the stop-slow paddle and the signal flag under various conditions, in terms of motorist detection and understanding, (2) to determine the effects of signaling procedure and signal-person uniform on signal detection and understandings, and (3) to determine other factors relating to the desirability and effectivesness of the two devices.

PROGRESS: A statistical analysis of data has been completed and a different statistical analysis is underway. This will be incorporated into the existing draft report.

SIX-MONTH PLAN: Prepare draft of final report and submit to client for approval.

PROJECT: R21701881 TITLE : DETER OF LONG TERM PERF CHEMI GROUT
SECTION: TECH/TRAN INVESTIGATOR: DR. MATHIOUDAKIS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 3000
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 60000

PROJECT INITIATION DATE : 08/27/1991
STUDY PROPOSAL DUE : 02/23/1992
STUDY PROPOSAL COMPLETED: 12/30/1992
STUDY PROPOSAL APPROVED : 04/02/1993
ORIGINAL COMPLETION DATE: 05/31/1994
REVISED COMPLETION DATE : 03/31/1997
REVISION NUMBER : 3

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	14145	46233	20000	70000	14615	49615
TOTAL COSTS	14145	46233	20000	70000	14615	49615

OBJECTIVE: To develop a greater understanding of long-term performance of different types of chemical grouts in concrete.

PROGRESS: Field observations of acceptance testing of anchor bolts have been completed. Report preparations are in progress.

SIX-MONTH PLAN: Complete report.

PROJECT: R21801881 TITLE : ENGRG AUTOMATION TOOLS EVAL/IMP
SECTION: TECH/TRAN INVESTIGATOR: GREEN
CLIENT : VARIOUS ENGINEERING GROUPS-DEPT
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 5000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	14963	14963	0	20000	0	0
TOTAL COSTS	14963	14963	0	20000	0	0

OBJECTIVE: To provide evaluations, implementation plans, procedures and training for several new engineering automation tools that are currently being developed by CADD vendor or by third party vendors compatible with the CADD vendor.

PROGRESS: The understanding and implementation techniques of the design visualization tool of creating a video for use in improving communications to the public continues. Evaluation of vehicle turning radius software; recommendations made; attempting to acquire. We continued to provide guidance and look for additional software tools for use in hydraulics/ hydrology. Continue to work on evaluation of survey data processing software.

SIX-MONTH PLAN: Continue the evaluation of video techniques and start an implementation plan. Continue to evaluate the drafting packages: Draftworks, PowerDraft and Imaginer. Accomplish as much implementation of the previously selected products as the fiscal environment will allow.

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PROJECT: R22001881 TITLE : EVALUATION OF WINTER TRAF ACCIDENT
SECTION: TECH/TRAN INVESTIGATOR: DR. ELKORDY
CLIENT : MAINTENANCE/TRAFFIC & SAFETY
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 3500
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 106000

PROJECT INITIATION DATE : 04/27/1992
STUDY PROPOSAL DUE : 10/24/1992
STUDY PROPOSAL COMPLETED: 12/02/1992
STUDY PROPOSAL APPROVED : 06/11/1992
ORIGINAL COMPLETION DATE: 12/31/1995
REVISED COMPLETION DATE : 12/31/1996
REVISION NUMBER : 1

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	32006	49469	31500	106000	23019	52519
TOTAL COSTS	32006	49469	31500	106000	23019	52519

OBJECTIVE: To find out if winter severity has statistically significant impact on vehicle traffic accidents. If impact does exist, to quantify the relation between winter severity and snow related traffic accidents.

PROGRESS: Initial results have been compiled and received positive reviews from clients who disseminated information to maintenance engineers in the State. Correlation of accidents with snow/ice resource usage and overlaying the data on GIS system is currently in progress.

SIX-MONTH PLAN: To complete overlaying and analysis of the data on GIS, and to start writing final report after consultation with client.

SECTION III

Proposed Projects Not Yet Initiated

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 93-052 **DEVELOPMENT OF IMPROVED PAVEMENT PERFORMANCE PREDICTION MODEL**

PROBLEM: The Department's current pavement management system plan calls for the development of model to predict performance of both rehabilitation and maintenance treatments, given site specific variables such as soils, climate, and traffic. Volume II of the Rehabilitation Manual only gives average expected service lives under limited conditions for each treatment. Predicts service life is an important input to the life-cycle cost analysis, whose results will decide the selection o the preferred treatment for each projects. NYSDOT does not have any formal and comprehensive pavements performance prediction models that can meet this pavement management requirement. The AASHTO pavement performance model that NYSDOT recently adopted was only calibrated with very limited past performance and experience.

OBJECTIVE: Validate and calibrate the AASHTO performance model. Develop new models that can predicts the effect of each rehabilitation and maintenance treatment on safety, serviceability, and service life of a projects, by properly considering relevant variables including soils, climate, traffick drainage features, and existing pavements conditions.

BENEFITS: At the project level, designs can be effectively made to accomplish the goals of improving safety and serviceability with the prediction models. The life-cycle cost analysis can yield more accurate results and the most cost-effective treatment can be selected. At the network level, the long-term future needs estimating can be based on the predicted service lives of he treatments.

CLIENT: Pavement Management Group, Office of Operations
Technical Services Division
Facilities Design Division

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: **93-080 ANALYSIS OF INNOVATIVE WALL SYSTEMS**

PROBLEM: New retaining wall systems have been recently introduced into the market place. Some of these systems are considered to be "hybrid" in nature, as they were conceived, designed and built as a combination of both mechanically stabilized earth systems (MSES) and gravity retaining walls (GRW). It is anticipated that design principles of both MSES and GRW will govern their behavior and that these new systems will inherit the merits of both their ancestors and also become more cost-effective than the traditional MSES or GRW. However, here is a debate as to which MSES and GRW design principles relative to external and internal stability are applicable. This issue must be resolves to that a comprehensive design approach can be adopted by NYSDOT which would enable the Soil Mechanics Bureau of the NYSDOT to perform a routine reviews of these systems or approval.

OBJECTIVES:

1. Understand the mode(s) of failure of hybrid wall systems as compared to MSES and GRW systems.
2. Develop a comprehensive design procedure.

BENEFITS:

1. Understand the behavior of hybrid wall systems.
2. Development of a statewide design methodology of hybrid wall systems.
3. Speedy approval of these wall systems designs for State projects.
4. Savings in construction costs.

CLIENT: Soil Mechanics Bureau

SECTION IV

Pooled SPR Fund Projects

New York State Department of Transportation
Transportation Research and Development Bureau

Performance Evaluation of Crumb Rubber Modified (CRM) Asphalt Pavements
SPR-2 (166)

The growing nationwide interest in alternative used for scrap tires has caused many state highway agencies to study and consider the use of CRM technology in asphalt pavements. There are two principal unresolved issues related to the use of CRM in asphalt paving materials. These modified asphalt mixes must be field-evaluated to establish expected levels of performance and cost-effectiveness. In addition, the ability to recycle asphalt paving mixes containing CRM has not been demonstrated.

These unresolved issues have been identified for study by the Secretary of Transportation in Section 1038 of the Intermodal Surface Transportation Efficiency Act (ISTEA) enacted in December 1991. The congressional study will collect and evaluate all existing available data. this pooled-fund study will address areas of field performance, cost-effectiveness, and recycling of CRM asphalt pavements which are not adequately resolved in the ISTEA study. In addition, the Administrator of the Environmental Protection Agency has the responsibility to determine the environmental and health effects of using CRM asphalt pavements and recycling pavements already containing crumb rubber. The potential exists for coupling this effort with pooled-fund projects.

The objectives of this study are:

1. Conduct laboratory evaluations of CRM asphalt mixtures to determine mix design and laboratory performance characteristics.

2. Design and construct test sections of CRM asphalt pavements in various climatic regions of the United States, including appropriate control sections, to evaluate field performance.

3. Conduct annual evaluations and document field performance of recycled CRM asphalt pavements.

New York State Contributions:

FFY 1993	—	$5,000
FFY 1994	—	$5,000
FFY 1995	—	$5,000
FFY 1996	—	$5,000
FFY 1997	—	$5,000
FFY 1998	—	$5,000
FFY 1999	—	$5,000

New York State Department of Transportation
Transportation Research and Development Bureau

High Strength Concrete for Bridges
SPR-2 (170)

In the 1950s, practice in the United States called for 4,000 to 5,000 psi (27.5 to 34.5 MPa) strength for prestressed concrete. Prior to the 1970s, concrete designers were content with utilization of 5,000 to 6,000 psi (34.5 and 41 MPa) strength concrete as easily attainable compressive strengths for structural members. Then during the late 1970s and early 1980s, it was demonstrated that application of 9,000 to 11,000 psi (62 to 76 MPa) strength concrete was not only practical but economically feasible. Now, concrete with compressive strengths of 15,000 to 20,000 psi (103 to 138 MPa) is commercially available in the United States.

Over the past 15 to 20 years, considerable research, including SHRP, has been conducted on high strength concretes, primarily dealing with selection of materials, development of concrete mix design criteria, determination of basic physical properties of concrete, and structural behavior of members made of high strength concrete. Research on the benefits of using high strength concrete for bridges has shown that bridge span capacities can be increased, wider girder spacings (and hence a fewer number of girders) can be used, concrete compressive and flexural capacities can be increased, and that concrete durability can be improved. However, despite all of these positive research results, relatively little has been done regarding implementation of high strength concretes in bridges.

The objective of the proposed study is to design, build, instrument, and test a bridge constructed of almost entirely of high strength concrete, so as to encourage states to incorporate this technology into their bridge programs. This objective can be accomplished by the following tasks:

1. Design a bridge deck, superstructure, and substructure to be constructed of concrete with compressive strengths ranging from 10,000 to 12,000 psi (69 MPa to 83 MPa). The bridge would be a reasonable length.

2. Work with concrete suppliers and testing organization to develop appropriate quality control procedures and testing.

3. Construct the bridge using local labor forces so as to demonstrate any needed re-training.

4. Instrument the bridge and monitor its performance for an appropriate period of time (about 3 years).

Other countries, such as Canada and France, have already constructed or are planning to construct experimental high strength concrete bridges such as the one proposed here. It is hoped that the U.S. can effectively use this technology for our nation's bridges. A recent progress report (December 1992) by the Construction Technology Laboratory and Tulane University for the Louisiana Department of Transportation and Development, "Feasibility Evaluation of Utilizing High Strength Concrete in Design and Construction of Highway Bridge Structures" is available from Harold "Skip" Paul of the Louisiana Transportation Center (phone:

(504) 767-9124; fax: (504) 767-9108). Also a recent state-of-the-art paper, "High Strength Concrete Bridges" is available from Sue Lane, the FHWA contact.

New York State Contributions:

FFY 1994 - $20,000
FFY 1995 - $20,000
FFY 1996 - $20,000
FFY 1997 - $20,000

New York State Department of Transportation
Transportation Research and Development Bureau

Predicting HOV Facility Demand
SPR–2 (171)

It is widely accepted that HOV ridership is a function of travel time savings over roadway congestion. However, predicting ridership on HOV facilities, especially on a 20–year horizon, less widely understood. More information is needed on the correlation between ridership demand and travel time savings as well as other contributing factors. Impacts of different occupancy requirements on HOV ridership are also required.

This study will develop and evaluate methods to predict carpool and bus ridership on HOV facilities with sensitivity to general–purpose lane capacity, HOV occupancy requirements, and peak period freeway congestion.

New York State Contributions:

FFY 1994 — $10,000

FFY 1995 — $10,000

FFY 1996 — $10,000

New York State Department of Transportation
Transportation Research and Development Bureau

Evaluation of Crumb Rubber Modified Asphalt Pavements
SPR-2 (174)

Section 1038 of the Intermodal Surface Transportation Efficiency Act requires each state highway agency to use crumb rubber modifier (CRM) in asphalt pavements beginning funding year 1994. In response to this legislation, FHWA and 33 participating state highway agencies initiated a 1993 pooled-fund study to address the long-term performance and recycling concerns associated with use of CRM. The current study will examine the long-term field performance of in-service pavements annually for 5 years. The data generated in this study will be used to develop pavement structural and mixture design and construction specifications to properly implement use of CRM. Considering the 1994 implementation mandate and that little difference in performance is expected between control and CRM pavement test sections within 5 years, there is a need to rapidly accelerate pavement damage and generate performance data to develop pavement structural design criteria. This can be accomplished efficiently and effectively through use of accelerated pavement testing.

The objectives of this study are:

1. Design and construct 8 to 12 CRM and control pavement test sections at the Turner-Fairbank Highway Research Center Pavement Testing Facility.

2. Generate early performance data (rutting and fatigue) through use of two Accelerated Loading Facilities.

3. Validate and recommend pavement structural design methods and performance prediction models.

New York State Contributions:

FFY 1994	—	$10,000
FFY 1995	—	$10,000
FFY 1996	—	$5,000

New York State Department of Transportation
Transportation Research and Development Bureau

Development of Standard Reference Soils
SPR–2 (175)

The program is of national importance to all soil testing and quality control offices. Briefly, it is an interlaboratory testing program that will include 13 commonly used ASTM/AASHTO geotechnical methods and involve some 24 voluntary laboratories distributed across the United States. The test results will be used to develop reliable precision statements for the selected standards. Four soils, which represent a wide range of typical deposits, will be used for the program. Large quantities of each soil will be processed to provide sufficient material for testing, and stockpile for commercial use will be established. At the conclusion of the program, the standard reference soils will be stockpiled and made available for quality assurance and quality control programs, research applications, and educations and training, The revenue generated from sell of the soils will be used to replenish the stockpile.

New York State Contributions:

FFY 1994 — $5,000

FFY 1995 — $5,000

FFY 1996 — $5,000

New York State Department of Transportation
Transportation Research and Development Bureau

National Vehicle Detector Test Center
SPR-2 (181)

The FHWA FY 1991 study "Detection Technology for IVHS" evaluated the performance of existing commercially available electronic surveillance systems to be used for IVHS applications. Given that the study was only testing detectors available at that time, this funding action purposes to provide for the establishment of a self-supporting national detector test center(s) to enable the testing of "new" sensors not tested in other FHWA studies. The objective is to determine if the surveillance/detection requirements developed under the study, "Development & Lab Testing of New Detection Technologies & Surveillance Concepts" are met for IVHS applications. The seed money will be used to facilitate the establishment of self-supporting facilities to test and evaluate these technologies and avoid the need for FHWA to repeat this effort.

New York State Contributions:
FY 1995 - $20,000
FY 1996 - $20,000

New York State Department of Transportation
Transportation Research and Development Bureau

Development and Validation of Traffic Data Editing Procedures
SPR-2 (182)

All states are involved in Traffic Data Program(s) that involve traffic counting, Automatic Vehicle Classification (AVC), and Weigh-in-Motion (WIM) activities. The study will develop automated editing procedures for the count, classification, and WIM data. The products will include software for identifying "questionable/invalid" data, processing the edited (acceptable) data and appropriate reporting of processed data.

New York State Contributors:
FY 1995 - $15,000
FY 1996 - $15,000
FY 1997 - $15,000

New York State Department of Transportation
Transportation Research and Development Bureau

Long-Term Field Monitoring of Migrating Corrosion Inhibitors SPR - 2 (184)

The rehabilitation of corrosion-damaged, and chloride-contaminated concrete structures has become a major activity within state bridge maintenance programs. In many cases, repair techniques include the removal of deteriorated concrete, which is then replaced with new concrete, in the form of patches or an overlay. Although new concrete generally provides a passive environment for reinforcing steel, corrosion may continue, or be initiated due to potential differences between the new and old concrete. The use of corrosion inhibitors is one of the techniques used to mitigate continued corrosion of the reinforcing steel in the newly rehabilitated structure. These inhibitors are usually either applied to the scarified surface prior to patching, or included as an admixture to the patch material.

As part of SHRP Contract C-103, four (4) of the most promising corrosion inhibitors for these applications were tested and evaluated under laboratory conditions. Although positive results were obtained using actual bridge deck specimens, the need exists to evaluate these inhibitors on in-service structures.

The monitoring of full-scale treatments is proposed to gain more data on the length of time that the various inhibitors are actively providing protection, and environmental conditions that aid or hinder their effectiveness. Also, a field evaluation project would provide cost data for full-scale treatments. In addition to further evaluation of inhibitor effectiveness, a field study would identify special procedures and precautions that are required for success of the treatment. These include: construction delays associated with the use of inhibitors; how bond strength of the new concrete is effected, including procedures necessary to maximize the bond strength; and, the compatibility of the inhibitors with other corrosion protection methods.

These data could then be used to identify circumstances best suited for the use of inhibitors, and develop guidelines for proper application of the treatments.

New York State Contributions:
FFY 1996 - $6,000
FFY 1997 - $6,000
FFY 1998 - $6,000
FFY 1999 - $6,000
FFY 2000 - $6,000

New York State Department of Transportation
Transportation Research and Development Bureau

Roadside Safety Hardware Crash
Tested to NCHRP Report 350
SPR 2- (187)

NCHRP Report No. 350 contains recommended procedures for crash testing and evaluating highway safety features. The objective of this study is to use finite element analysis and crash tests to evaluate various types of safety appurtenances that would be used in several States that were not tested in other programs.

New York State Contributions:
FFY 1996 - $5,000
FFY 1997 - $5,000
FFY 1998 - $5,000
FFY 1999 - $5,000

New York State Department of Transportation
Transportation Research and Development Bureau

Support, Maintenance and Refinement of the National Transportation Control/ITS Communication Protocol (NTCIP) SPR 2- (189)

The NTCIP is a collection of public domain communication protocols which standardize the interconnectivity of traffic control devices and traffic control centers. These protocols are being developed to ensure the integration of ITS technologies with existing and future electronic highway infrastructure. Although the current development effort is focusing on the interconnectivity of traffic signal controllers, efforts to develop communications protocols for variable message signs, ramp metering devices, closed circuit television systems, highway advisory radio, and other related devices are already underway.

The objective of this effort is to provide for the support maintenance, and refinement of the protocol over the next five years.

At least two States have already passed legislation requiring interconnecting capability among the different traffic control devices and it is expected that other States will also follow this trend.

New York State Contributions:
FFY 1996 - $5,000
FFY 1997 - $5,000
FFY 1998 - $5,000
FFY 1999 - $5,000
FFY 2000 - $5,000

New York State Department of Transportation
Transportation Research and Development Bureau

Roadside Design for Trucks/Large Vehicles
SPR-2 (S-97-13)

Passage of the Surface Transportation Assistance Act in 1982 led to an increase in truck travel by 50% by 1989. Globalization of trade, deregulation of the trucking industry and advances in technology and the distribution system will lead to further increases in truck travel. This increase in truck traffic and potential consequences of accidents leads to concerns about the adequacy of current roadside design standards for large trucks. With the exception of some median barriers, most roadside features and appurtenances are not designed for trucks.

This research will a) identify locations where truck barriers should replace conventional barriers, giving consideration to traffics volume, truck volumes, speed limit, accident rate, cargo lethality and roadside development; b) determine and develop requirements for various aspects of truck-safe clear zones that may provide adequate alternatives to the use of barriers. Factors what will be determined are adequate combinations of clear-zone widths, cross slopes, roll-over, and lengths; c) develop warrants based on review factors such as AADT, % truck traffic, level of service, design speed, lane and shoulder widths, and car accident rates.

New York State Contributions:

FFY 1997 - $10,000
FFY 1998 - $10,000

New York State Department of Transportation
Transportation Research and Development Bureau

Durability of Geosynthetics
S-97-28

This is the final phase of a project which has been underway since September 1991 to develop testing and interpretation protocols for geosynthetic durability evaluation. Data obtained to date indicate that the geosynthetics tested are considerably more durable than originally estimated and that their degradation response time is nonlinear. Because of this longer degradation time and nonlinearity final results can be more accurately achieved if laboratory specimens which have been incubating for up to 750 days, are allowed to incubate for up to 1000 days. The research will provide clear basic guidance on testing and lifetime predictions for all infrastructure applications involving polymers, providing savings in geotechnical reinforcement applications and benefit other civil engineering polymer applications.

New York State Contributions:

FFY 1997 — $10,000

SECTION V

Administration/Training

PROJECT: 10-01 ADMINISTRATION

SCOPE: A variety of recurring activities are required to administer the Bureau's research program. Charges are made on the basis of the particular service or function performed within the following categories:

Managerial Operations: The day-to-day activities which involve aspects of this Bureau's administration (e.g., inquiries, explanations, and justifications) which must be delegated, clarified, followed up, and finally resolved. These activities also deal with the broad general aspects of administration such as policy, procedures, balance, and funding of the research program. These tasks are performed exclusively by the Director, Section Heads, and Administrative Assistant. The level of effort varies among these individuals depending on their specific responsibilities and assignments.

Program Development: Efforts required to prepare and publish the Bureau's Federal Highway Planning and Research Work Program, and the submission of appropriate projects for consideration in the National Cooperative Highway Research Program (NCHRP), or to FHWA for consideration for administrative contract work, pooled-fund studies, or FHWA research are charged to this function.

Program Control: Activities under this function involve monitoring expenditures and work accomplished in relation to projected progress schedules and budgeted costs. It also concerns efforts directed toward ensuring that the research remains within the stated scope and objectives, and that marginal work or work which is no longer considered necessary by the requesting program manager is terminated.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $250,000

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
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PROJECT: R01001881 TITLE : ADMINISTRATION
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 250000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	229825	229825	250000	250000	182692	182692
TOTAL COSTS	229825	229825	250000	250000	182692	182692

08/23/1996
THRU PAY PERIOD S 6/F19
IAS RUN DATE IS 06/27/1996

NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
PROJECT STATUS REPORT
FHWA SEMI-ANNUAL

PROJECT: R01002881 TITLE : ADMINISTRATION-PROJ SEL/PROG DEV
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 100000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	76596	76596	100000	100000	73077	73077
TOTAL COSTS	76596	76596	100000	100000	73077	73077

PROJECT: R01003881 TITLE : ADMINISTRATION - UTRC
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 12500

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	4125	4125	12500	12500	9135	9135
TOTAL COSTS	4125	4125	12500	12500	9135	9135

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01004881 TITLE : ADMIN - CONSORTIUM/CONTRACT RES
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT :
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 58000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	22442	22442	58000	58000	42385	42385
TOTAL COSTS	22442	22442	58000	58000	42385	42385

New York State Department of Transportation
Transportation Research and Development Bureau

PROJECT: 16-0 TRAINING

OBJECTIVE:

SCOPE:

Dorothy Hogan attended training October 26, 1995 on OCLC original cataloging. She was asked by TRB to Beta test the new CD-ROM on TR Records full text on CD-ROM, which was shown at January's TRB 75th Anniversary meeting.

Suman Dhar coordinated the Department's participation in FHWA Demonstration Project 75, "Non-destructive Testing Workshop." The workshop for NYSDOT is expected to be scheduled early in 1996.

Cornell hosted its 51st annual Highway Superintendent's School on June 3-5, 1996. The school's planning committee received positive comments on the overall quality of training, including the sessions led by DOT speakers. There was significant interest in Superpave. The Superpave demonstration sponsored by Asphalt Pavement Association was well attended.

On July 11, 1996, Bob Valenti attended the local bridge conference steering committee meeting in Syracuse, NY. He reported his training subcommittee was on target for a December pilot course on bridge inspection and maintenance.

STATUS: Continuing

ESTIMATED 1996-97 COSTS: $30,000

CLIENT: All Department Units

08/23/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
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IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01600881 TITLE : TRAINING
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT : VARIOUS
CONTRACTOR :

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 70000

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	14526	14526	70000	70000	51154	51154
TOTAL COSTS	14526	14526	70000	70000	51154	51154

SECTION VI

Completed Projects

New York State Department of Transportation
Transportation Research and Development Bureau

PUBLICATIONS DURING THE PERIOD 10/1/95 - 9/30/96

RESEARCH REPORTS

RR 164	Adapting the AASHTO Pavement Design Guide to New York State Conditions	10/95
RR 165	Measuring Bridge Vibration for Detection of Structural Damage	12/95
RR 166	Overlays on Faulted Rigid Pavements	5/96
RR 167	Standards for Noise Barriers Using Recycled-Plastic Lumber	9/96
RR 168	Safety-Based Bridge-Overstress Criteria for Non-Divisible Loads	9/96

SPECIAL REPORTS

SR 122	Chip-Seal Design Using an Expert System	8/96
SR 123	Frictional Characteristics of Sand and Sand-Deicer Mixtures on Bare Ice	8/96

CLIENT REPORTS

CR 74	Re-Evaluation of Culvert Design Procedures for Non-Bridge-Size Culverts	5/96
CR 75	Forward Lighting Configurations for Snowplows: A Pilot Study	8/96
CR 76	Preventive Measures / Remedial Activities Associated with 1995- Early-Distress Survey	8/96
CR 77	Cost-Reductions in Cleaning Auto Parts	9/96
CR 78	Load Tests of a Severely Curved Steel I-Girder Bridge	9/96

OTHER PUBLICATIONS

Implementing SHRP Products in New York: Third Progress Report 5/96
Transportation R&D News (quarterly newsletter)
TNT Technology News Transfer (quarterly newsletter)
ITS News: Intelligent Transportation Systems for New York (semiannual newsletter)

Papers Presented at 1996 TRB Annual Meeting:

Estimating Average Automobile Occupancy from Accident Data in New York
Forward-Lighting Configurations for Snowplows
Updating Pavement Design Procedures for New York State
Developing a High-Performance Concrete for New York State Bridges

Papers submitted for the 1997 TRB Annual Meeting:

Standards for Noise Barriers Using Recycled-Plastic Lumber
Frictional Characteristics of Sand and Sand-Deicer Mixtures on Bare Ice
Field Experience with High-Performance Concrete on New York State Bridge Decks
Applying Statistical Methods to Improve High-Performance Concrete for New York State Bridge Decks
Diagnostic Load Testing for Bridge Load Rating

SECTION VII

100% State Funded Projects

08/26/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01001801 TITLE : ADMINISTRATION STATE FUND EFFORTS
SECTION: ADMINISTRATION INVESTIGATOR: ALL SECTIONS
CLIENT : N/A
CONTRACTOR :

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 90000

PROJECT INITIATION DATE : 10/01/1995
STUDY PROPOSAL DUE : 03/29/1996
STUDY PROPOSAL COMPLETED: 10/01/1995
STUDY PROPOSAL APPROVED : 10/01/1995
ORIGINAL COMPLETION DATE: 09/30/1996
REVISED COMPLETION DATE : 09/30/1996
REVISION NUMBER : 0

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	29048	29048	90000	90000	65769	65769
TOTAL COSTS	29048	29048	90000	90000	65769	65769

NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
PROJECT STATUS REPORT
FHWA SEMI-ANNUAL

PROJECT: R01239801 TITLE : UTRC - CURING
SECTION: MATER./PAVING INVESTIGATOR: CHOU
CLIENT : STRUCTURES/MATERIALS
CONTRACTOR : RPI

PROJECT INITIATION DATE : 01/20/1993
STUDY PROPOSAL DUE : 07/19/1993
STUDY PROPOSAL COMPLETED: 02/05/1993
STUDY PROPOSAL APPROVED : 09/01/1994
ORIGINAL COMPLETION DATE: 09/30/1997
REVISED COMPLETION DATE : 09/30/1997
REVISION NUMBER : 0

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 10000

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	6392	68178	0	5000	0	0
TOTAL COSTS	6392	68178	0	10000	0	0

OBJECTIVE: To perdict the temperature and water fraction profiles that exist during the first 72 hours of curing in concrete pavements and bridge decks and to determine under what conditions concrete can be successfully placed.

PROGRESS: A project for continuous study of thermal effects during the early stages of curing concrete and further developing of a cement hydration and heat exchange two-dimensional model for concrete bridge decks has been approved by the University Transportation Research Center - Region II entitled, "Cement Hydration and Heat Exchange Modeling for Curing Process of Concrete Pavement and Bridge Decks at Early Stages."

SIX-MONTH PLAN: (1) To complete the field experiment report for verifying the revised mathematical model for Class H concrete bridge deck curing process. (2) To complete other field experiments for verifying the revised mathematical model for Class HP concrete bridge deck curing process by an improved experimental procedure.

08/26/1996 NEW YORK STATE ENGINEERING RESEARCH AND DEVELOPMENT BUREAU
THRU PAY PERIOD S 6/F19 PROJECT STATUS REPORT
IAS RUN DATE IS 06/27/1996 FHWA SEMI-ANNUAL

PROJECT: R01258801 TITLE : EVAL IGNITION OVENS ASPHALT DETER
SECTION: ADMINISTRATION INVESTIGATOR: T. WOHLSCHEID
CLIENT : MATERIALS BUREAU
CONTRACTOR :

PROJECT INITIATION DATE : 11/15/1995
STUDY PROPOSAL DUE : 05/13/1996
STUDY PROPOSAL COMPLETED: 11/15/1995
STUDY PROPOSAL APPROVED : 11/15/1995
ORIGINAL COMPLETION DATE: 12/31/1997
REVISED COMPLETION DATE : 12/31/1997
REVISION NUMBER : 1

APPROVED STUDY PROPOSAL AMOUNT : 1
ACTUAL STUDY PROPOSAL AMOUNT : 0
APPROVED ORIGINAL BUDGET AMOUNT: 20000

	ACTUAL EXPENDITURES		PROGRAMMED EXPENDITURES			
	YTD	LTD	YEAR TOTAL	LIFE TOTAL	YTD SCALED	LTD SCALED
PERSONAL SERVICE	15422	15422	15500	20000	11327	11327
TOTAL COSTS	15422	15422	15500	20000	11327	11327

OBJECTIVE: Measure the asphalt content of known mixes using two different ignition ovens. Compare results against both extraction test and plant automation records.

PROGRESS: Ovens have been purchased and are being evaluated.

SIX-MONTH PLAN: Continue evaluation and write report.

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